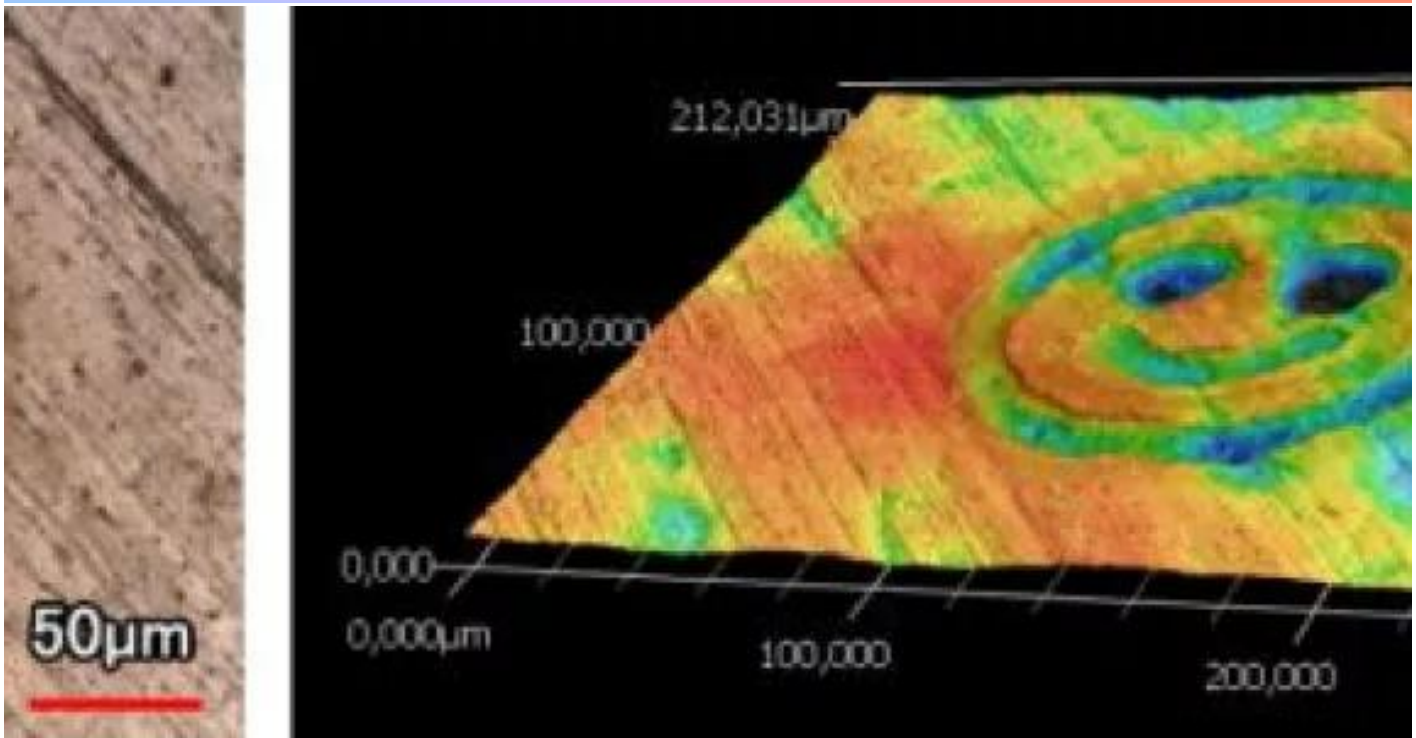




Femtosecond laser technology highly suitable for precision work

09 December 2019, 01:00

Olivier Malek

Looking for a technology for creating very small structures? The laser pulse duration with femtosecond laser technology is so short that the material does not have the time to heat up and immediately evaporate, so that protruding edges do not arise.

Femtosecond laser technology involves cold ablation. Additionally, the penetration depth is less than 0.1 µm, or 100 nm. This is called nano-processing. With an aperture of 15 µm you can create structures at micrometre level at x, y and with sub-micron resolution in the depth. The structures are uploaded from STL and DXF type files, so that they can be lasered immediately. In addition to micro-machining the structures, the lasered surfaces can be given nano-structured technology to create specific properties including water repellency, rainbow colouring, etc.

Interested? Sirris has this latest technology in-house and is making it available to companies for testing purposes.

The above photos show a 2 µm deep 'smiley' the size of a human hair, lasered onto a 1 µm thick copper layer.

Authors



Olivier Malek